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Can Skills Training Prevent Relationship Problems in At-Risk Couples? Four-Year Effects of a Behavioral Relationship Education Program

W. Kim Halford
Griffith University

Matthew R. Sanders and
Brett C. Behrens
University of Queensland

Eighty-three couples were stratified into groups at high and low risk for relationship distress and randomized to either the Self-Regulatory Prevention and Relationship Enhancement Program (Self-PREP) or a control condition. As predicted, there were differential effects of Self-PREP on high-risk and low-risk couples. Because of low statistical power, results must be interpreted cautiously, but at 1-year follow-up high-risk couples in Self-PREP showed trends toward better communication than control couples. However, there was no difference in the communication of Self-PREP and control low-risk couples. High-risk couples receiving Self-PREP exhibited higher relationship satisfaction at 4 years than control couples, but in low-risk couples relationship satisfaction was higher in the control condition. High-risk couples seemed to benefit from skills-based relationship education, but low-risk couples did not.

Couples who sustain mutually satisfying relationships experience many benefits. Relative to other people, those in satisfying marriages have lower rates of psychological distress, higher rated life happiness, and greater resistance to the detrimental effects of negative life events (Bradbury, 1998; Gore, 1978; Gove, Hughes, & Style, 1983; Halford, 2001; Halford, Kelly, & Markman, 1997). In contrast, being in a distressed marriage is a generic risk factor for poorer mental and physical health for the couple and their offspring (Coie et al., 1993; Halford, 1999) and is strongly associated with risk for relationship aggression (Arias, Samios, & O'Leary, 1987; O'Leary et al., 1989).

Almost all couples report high relationship satisfaction at the time of marriage, but for many couples satisfaction erodes in the first few years of marriage (Hill & Peplau, 1998; Huston & Vangelisti, 1991; Kurdeck, 1998; Markman, 1981; Noller & Feeney, 1994; Veroff, Douvan, Orbuch, & Acitelli, 1998). Decreased satisfaction is associated with a high risk of separation (Gottman, 1993), particularly if there is physical aggression between the partners (Rogge & Bradbury, 1999). About 42% of Australian marriages end in divorce (McDonald, 1995), and about half of these divorces occur in the first 7 years of marriage (McDonald, 1995).

Across the United States, Western Europe, and Australia, relationship education programs are widely available to marrying couples (Halford, 1999; Simons, Harris, & Willis, 1994; van Widenfelt, Markman, Guerney, Behrens, & Hosman, 1997). These programs are intended to assist couples in sustaining satisfying marriages and to reduce divorce rates (van Widenfelt et al., 1997). Most relationship education programs are offered by religious and community

W. Kim Halford, School of Applied Psychology, Griffith University, Brisbane, Queensland, Australia; Matthew R. Sanders and Brett C. Behrens, School of Psychology, University of Queensland, Brisbane, Queensland, Australia.

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Correspondence concerning this article should be addressed to W. Kim Halford, Mt. Gravatt Campus, Griffith University, Brisbane, Queensland 4111, Australia. Electronic mail may be sent to k.halford@mailbox.gu.edu.au.

groups, the content of these programs is often not documented, and the effects of most of the programs have not been evaluated (Halford, 1999; van Widenfelt et al., 1997). Relationship education programs that have been evaluated empirically involve a substantial focus on training couple communication skills (Halford, 1999). For example, the Minnesota Couples Communication Project (Miller, Nunnally & Wackman, 1975; Wampler & Sprenkle, 1980), the Guerney Relationship Enhancement Program (Avery, Ridley, Leslie, & Milholland, 1980; Ridley, Jorgensen, Morgan, & Avery, 1982), and the Prevention and Relationship Enhancement Program (PREP; Markman, Stanley, & Blumberg, 1994) all emphasize training couples in communication skills. This focus seems appropriate given that deficits in communication and conflict management prospectively predict relationship distress in newly married couples (Noller & Feeney, 1994; Karney & Bradbury, 1995; Markman, 1981; Markman & Hahlweg, 1993; Pasch & Bradbury, 1998).

It has been shown that five to six sessions of relationship education with a skills-training focus reliably improve couple communication (Avery et al., 1980; Hahlweg, Markman, Thurmair, Engel, & Eckert, 1998; Markman, Floyd, Stanley, & Storaasli, 1988; Markman & Hahlweg, 1993; Miller et al., 1975; Renick, Blumberg, & Markman, 1992). These changes in communication are maintained for months or even years after completion of the education program (Hahlweg et al., 1998; Ridley et al., 1982; Stanley, Markman, St. Peters, & Leber, 1995).

The effects of skills-based relationship education in preventing erosion of marital satisfaction are not clear. To our knowledge, only three published studies have assessed the effects of relationship education after more than 1 year, and all of these evaluations were conducted on PREP (Dyer & Halford, 1998). In two studies, PREP couples showed enhanced relationship satisfaction up to 5 years after marriage relative to a control group (Hahlweg et al., 1998; Markman, Renick, Floyd, Stanley, & Clements, 1993), but in a third study no effect of PREP was evident at 2-year follow-up (van Widenfelt et al., 1997). One possible explanation of the negative effects of the van Widenfelt et al. study is that, in the studies that do show treatment effects, the effects of PREP become evident only after 4 to 5 years of marriage. Perhaps the 2-year follow-up in that study was insufficient to allow erosion of satisfaction to occur in the control group at a level such that a prevention effect was detectable from PREP. Alternatively, van Widenfelt et al. recruited couples classified as being at high risk for relationship problems, based on at least one partner reporting that his or her parents had divorced. It is possible that PREP was not effective with these high-risk couples. Unfortunately, behavioral measures of the effects of PREP on couple communication were not reported in the van Widenfelt et al. study, so it is unclear whether PREP helped the high-risk couples acquire the targeted communication skills.

Neither the Markman et al. (1988) nor Hahlweg et al. (1998) study was a true randomized controlled trial. In the Markman et al. study, couples were randomly offered or not offered PREP. Only about one third of couples who were offered the program participated, and these couples were compared with matched couples who were not offered PREP. In the Hahlweg et al. study, couples chose to take part in either PREP or a church-provided program. Thus, there was a confound of self-selection with PREP in both of these studies. The Markman et al. and Hahlweg et al. positive findings may have been artifacts of participant self-selection into PREP.

The current study was a randomized controlled trial of PREP, with a particular focus on its long-term effects across the first 4 years of marriage for couples at high risk of relationship problems. We focused on high-risk couples because, in most Western countries, 50% or more of couples who marry live together all of their lives (McDonald, 1995) and report being satisfied in their relationship at least most of the time (Stanley & Markman, 1996). Relationship education for low-risk couples may make little difference in regard to the positive outcomes likely to occur for these couples without such education.

We used the extensive research on predictors of relationship satisfaction and stability (Halford, 1999; Karney & Bradbury, 1995) to guide our selection of high-risk couples. Exposure to negative family-of-origin experiences has been reliably associated with an increased risk for relationship problems in offspring when they become adults. There are substantially higher

rates of relationship distress and divorce among adult offspring of divorce than among people with no family history of divorce (de Graaf, 1991; Glenn & Kramer, 1987; Glenn & Shelton, 1983; Pope & Mueller, 1976). Parental divorce seems to have a particularly strong impact on women (Glenn & Shelton, 1983). Inter-parental aggression also is associated with an increased risk for being involved in an aggressive relationship as an adult (e.g., Burgess, Hartman, & McCormack, 1987; Mihalic & Elliot, 1997; Stith & Farley, 1993; Straus, 1991; Straus, Gelles, & Steinmetz, 1980; Widom, 1989), particularly among men (Hotaling & Sugarman, 1986; Mihalic & Elliot, 1997; Stith & Farley, 1993; Straus, 1991; Straus et al., 1980; Widom, 1989). Female exposure to parental divorce and male exposure to interparental aggression are risk indicators that are easily assessed and therefore useful for targeting couples at high risk for relationship distress. Moreover, couples with these characteristics lack communication and conflict management skills (Halford, Sanders, & Behrens, 2000; Sanders, Halford, & Behrens, 1999; Skuja & Halford, 2000). Hence, PREP, with its focus on communication and conflict management, could be effective for prevention of problems in these high-risk couples.

An implicit assumption of skills-focused programs such as PREP is that acquired relationship skills are maintained over long periods of time, although there is some evidence that training effects attenuate over 5 to 7 years (Stanley et al., 1995). The use of self-regulation strategies has been recommended to assist long-term maintenance of adaptive relationship behaviors in both the marital (Halford, Sanders, & Behrens, 1994) and family (Sanders, 1998; Sanders & Glynn, 1981) intervention fields. In this approach, partners are taught not just the identified skills but also a series of meta-competencies, including self-appraisal of personal use of skills, self-selection of goals for change to promote relationship functioning, and evaluation of self-directed change efforts (Halford, 2001). Teaching self-regulation has been shown to aid generalization of parenting skills across diverse child-rearing situations (e.g., Sanders & Dadds, 1993). We developed a variant of PREP that incorporates self-regulation, and we call this variant Self-Regulatory PREP (Self-PREP).

In the current study, couples were stratified into those at high and low risk for relationship problems. High-risk couples were defined as those in which the woman's parents were divorced or the man's parents were reported to have been physically aggressive toward each other. Couples were randomly assigned either to Self-PREP or to a control condition consisting of guided reading and group discussion. The control condition was similar to many relationship education programs available through community agencies in Australia, in that expectations and goals for the relationship were discussed (Halford, 1999; House of Representatives, 1998). This condition was intended to provide a plausible relationship education program that couples would enjoy but that did not include training in relationship or self-regulation skills.

The current study was aimed at establishing whether Self-PREP improves couples' communication and helps them sustain high relationship satisfaction. It was hypothesized that, in comparison with high-risk couples in the control condition, high-risk couples receiving Self-PREP would show improvements in communication (Hypothesis 1), higher sustained relationship satisfaction (Hypothesis 2), and fewer relationship separations (Hypothesis 3). It was further hypothesized that, relative to low-risk couples in the control condition, low-risk couples receiving Self-PREP would benefit little from Self-PREP in terms of communication (Hypothesis 4), sustained relationship satisfaction (Hypothesis 5), or stability (Hypothesis 6). The final three predictions were based on the assumption that low-risk couples would have good communication and relationship outcomes in the control condition, and therefore a prevention effect would be evident only in the high-risk couples.

Method

Participants

Eighty-three couples who stated a plan to marry were recruited through media outreach to participate in a controlled trial of Self-PREP. The outreach sought couples who were involved in a committed relationship, who intended to marry within 12 months, and who wished to attend a relationship education program. The outreach included a focus on couples at high risk for future marital distress. Couples were selected who met the following criteria: (a) The couple was not presently married; (b) the couple stated an intention to remain together and to marry;

(c) both partners had a score of at least 90 on the Dyadic Adjustment Scale (DAS; Spanier, 1976) and did not report significant relationship distress; and (d) neither partner was currently receiving psychological or psychiatric treatment. As mentioned, couples were defined as high risk if the woman reported her parents had divorced or if the man reported his father had been violent toward his mother (n = 36). Couples were defined as low risk if neither of these risk factors were present (n = 47).

A series of two-way Risk (high vs. low) × Condition (Self-PREP vs. control) analyses of variance (ANOVAs) were conducted to establish whether the risk levels or conditions differed in regard to any of the demographic variables. There were no significant differences between the risk levels or conditions, so means are reported for the entire sample. Mean ages were 28.9 years (SD = 7.8) for women and 31.8 years (SD = 9.6) for men. The reported mean relationship duration was 27 months (SD = 18). Mean relationship satisfaction scores on the DAS (Spanier, 1976) were 117.5 for women (SD = 11.9) and 114.9 for men (SD = 12.4), placing the group in the satisfied range in regard to relationship adjustment.

Self-reported aggression scores on the Conflict Tactics Scale (described subsequently) did not differ significantly between conditions. Self-reported aggression was significantly higher for men in high-risk couples (M = 20.4, SD = 16.8) than for men in low-risk couples (M = 12.8, SD = 12.4), $F(1, 75)$ = 5.10, $p < .05$. It also was significantly higher for women in high-risk couples (M = 21.2, SD = 19.2) than for women in low-risk couples (M = 12.5, SD = 13.4), $F(1, 72)$ = 4.93, $p < .05$. The higher levels of reported aggression in the high-risk couples provide validation of their classification as high risk. In 59 of the couples (71%), at least one partner had a university-level education, indicating that our sample was biased toward more highly educated individuals. Forty-nine of the couples (59%) were living together, which is consistent with Australian data showing that the majority of couples live together before marriage (McDonald, 1995). Eighteen of the women (22%) and 29 of the men (35%) had been married previously, and 24% of couples had children living with them from the current or a previous relationship. Again, this is consistent with Australian data on the high prevalences of second marriages and stepfamilies (McDonald, 1995).

Measures

Observational measures of couple communication. Communication was assessed before and after relationship education and at a 1-year follow-up. On each occasion, couples engaged in two discussions, each 10 min in duration, on topics about which they disagreed. In one discussion the man selected the topic, and in the other the woman selected the topic. The order of discussion of male-nominated and female-nominated topics was counterbalanced for order effects. Discussion of conflict topics has been used widely to assess couple communication (see Weiss & Heyman, 1997).

The videotaped interactions were coded through our adaptation of the Katogoriensystem fur Partnerschaftliche Interaktion (KPI; Hahlweg & Conrad, 1985), which we refer to as the Rapid-KPI (Halford et al., 2000; Sanders et al., 1999). We coded each 30-s time interval for the occurrence of each of four classes of communication: (a) positive discussion (describe problem and arrive at positive solution), (b) validation (accept and agree), (c) invalidation (disagree and justify), and (d) conflict (criticize and arrive at negative solution). We also coded the occurrence of negative nonverbal behavior, as originally defined in the KPI, in each 30-s interval (definitions of each code are available in Halford et al., 2000, or Sanders et al., 1999). The derived measures were the percentages of intervals in which the behaviors occurred. We have shown that these measures derived from the Rapid-KPI discriminate between distressed and nondistressed couples (Osgarby & Halford, 2000) and are sensitive to changes in communication occurring from couples therapy (Behrens, Sanders, & Halford, 1990; Halford, Sanders, & Behrens, 1993; Kelly & Halford, 1995). The major advantage of the Rapid-KPI over the original KPI is economy. Coding a 10-min interaction with the original KPI requires approximately 3 to 4 hr, as compared with about 30 min with the Rapid-KPI.

Videotapes were coded by two research assistants unaware of the intervention condition or risk level of the couples. Coders received approximately 50 hr of training on the Rapid-KPI. Training consisted of memorization of code definitions, instruction that included watching precoded videotapes, extensive practice in coding, and feedback. A random sample of one third of all tapes was coded independently by a second rater. In general, observed interrater agreement on behavioral coding was satisfactory (Kappas were .65 for positive discussion, .58 for validation, .69 for invalidation, .62 for conflict, and .59 for negative nonverbal behavior).

Self-report measures. The primary long-term outcomes in the study were couple relationship satisfaction and stability. Participants completed the DAS (Spanier, 1976), a frequently used 32-item self-report inventory yielding a global marital satisfaction score (wording was modified for premarital assessment as described by Markman, 1981). Participants also completed a modified version of the Marital Status Inventory, a 14-item scale assessing steps taken toward separation (Weiss & Cerreto, 1980). In the modification, which we refer to as the Relationship Status Inventory (RSI), 4 items referring to marital dissolution were eliminated, and some items were reworded to make them appropriate for premar-

ital assessment of dissolution potential. Both the DAS and the RSI were administered before and after participants completed the relationship education programs and at 1- and 4-year follow-ups. At preintervention, we also assessed relationship aggression using the Conflict Tactics Scale (Straus, 1979), a widely used measure of the occurrence of specific aggressive acts in the previous 12 months. The derived score we used was frequency of physical acts of aggression.

Relationship Education Programs

Self-PREP. Self-PREP consisted of five group sessions involving 3 to 5 couples per group. The content of the program is detailed in Table 1. In essence, Self-PREP covers areas similar to those covered by PREP (Stanley et al., 1995) but includes an additional focus on self-regulation. Partners are helped to self-evaluate their behavior across a range of domains of relationship interaction, to select goals for self-change, and to implement and evaluate their self-change efforts. For example, across the first three sessions, couples undertook a series of exercises in which positive communication was described and modeled and then undertook communication tasks together. Next the partners self-evaluated their current communication skills with the assistance of the group leader and identified specific behavioral goals to improve communication. Finally, couples engaged in communication tasks in the group and at home, attempting to implement their self-selected communication change goals and to evaluate their attainment of those behavior change goals (more detail on these procedures is provided in Halford & Behrens 1996).

Control relationship education program. The control program was intended to reflect the blend of didactic information and discussion characterizing the forms of relationship education widely available to couples through community agencies in the United States, the United Kingdom, and Australia (Halford, 1999; House of Representatives, 1998). An initial group meeting with 3 to 5 couples per group consisted of introductory exercises and a discussion of relationship expectations. Each couple was provided with a copy of the book *Living and Loving Together* by Montgomery and Evans (1989). The book is popular in Australia and provides a readable explanation of a cognitive–behavioral approach to the enhancement of couple relationships. Topics covered in the book include expectations, communication, and management of conflict. Each week couples received a letter recommending particular sections of the book to read along with some discussion questions. The

Table 1
Content of the Five-Session Self-PREP Training Program

Session	Content
1	Introduction to group members; explanation of rationale for self-directed group program focused on skills training; identification of key behavioral domains promoting relationship intimacy; self-directed intimacy enhancement through self-directed goal setting and definition of homework task of behavior change; identification and modeling of key communication skills to enhance intimacy
2	Review of intimacy enhancement behavioral homework tasks; self-directed selection of further behavior change goals; review of key communication skills; guided self-evaluation of current communication skills; self-directed selection of communication enhancement goals and practice of implementation of those skills; self-directed goal setting and definition of homework task to enhance communication
3	Review of communication homework tasks, self-directed selection of further goals, and definition of further homework tasks; introduction to the concept of the patterns of conflict and effective conflict management; negotiation with partner about relationship rules for managing conflict; self-directed goal setting for effective management of conflict; introduction to the concept of flexible gender roles, couple review of current gender roles, self-directed goal setting for future gender role flexibility
4	Review of communication homework task; review of the role of sexuality in relationship intimacy; couple discussion and goal setting to enhance sexual intimacy; introduction to the concept of partner support, self-directed goal setting to enhance partner support; self-directed definition of homework tasks to implement selected goals in areas of sexuality or partner support
5	Review of homework tasks; self-directed selection of any further goals to enhance relationship functioning; introduction of issue of maintenance of relationship functioning; self-directed identification of future life events affecting relationship; planning to promote relationship adaptation to predictable life events; closure

Note. Self-PREP = Self-Regulatory Prevention and Relationship Enhancement Program.

couples were advised to read and discuss together the issues raised. No specific skills training exercises were recommended, and there was no mention of concepts of self-regulation. After 3 and 6 weeks, the couples met in groups and discussed the issues covered in their reading. The leader provided a nondirective, Rogerian style of discussion and facilitation. Our intention was to provide positive relationship education that did not include the active skills training or self-regulation strategies provided in Self-PREP.

Group leaders. Groups in both the Self-PREP and control conditions were led by Brett C. Behrens, a master's-level registered psychologist with 5 years of experience in cognitive–behavioral couples work. When groups comprised 4 or 5 couples, a co-leader was involved. The co-leaders were one of four female clinical psychology master's students, all of whom had experience and training in working with couples. Each co-leader led the same number of groups in the Self-PREP condition as she did in the control condition. A detailed written leader's manual was prepared for each condition, and all leaders received intensive training and supervision from W. Kim Halford and Matthew R. Sanders. All group sessions were videotaped, and a sample of sessions was reviewed each week to ensure adherence to the condition protocol.

Procedure

Couples responded to a media outreach consisting of newspaper articles, television and radio stories, and newspaper advertisements, all of which focused on the importance of communication in sustaining a healthy marriage. A second focus of this outreach was the role of family-of-origin divorce and violence in placing people at risk for relationship problems. In these media pieces, it was stated that a brief relationship education program might provide help in reducing this risk. This second focus was intended to encourage couples at high risk for relationship problems to enlist in the study.

Couples attended two assessment sessions. In the first session, couples were told conjointly about the study and its aims and were informed that they would receive one of two relationship education programs. Both programs were described as running for 5 weeks, consisting of group meetings as well as activities to be undertaken at home, and having a focus on couple expectations of relationships, communication, and intimacy. We stated that both programs were widely offered, but it was unclear which program would be more effective in the long term. Partners were interviewed individually about their relationship, their parents' divorce status, and their goals in participating in relationship education. While each partner was being interviewed, the other partner completed the DAS and the RSI. The couple then completed one of the problem-solving discussions. Finally, partners were given a booklet containing the remaining self-report measures, which they were asked to complete before the second session. In the second session, the second problem-solving discussion was undertaken, and couples were informed of the condition to which they had been assigned.

After couples had completed relationship education, they attended two assessment sessions approximately 1 week apart. In each of these sessions, couples again completed a problem-solving discussion. Between sessions, partners individually completed the battery of self-report measures. A further two assessment sessions were scheduled 12 months after completion of the program. The assessment protocol at the 12-month follow-up was the same as at preintervention and postintervention. At the 4-year follow-up, couples were sent a package of self-report measures and a stamped, addressed, return envelope and were asked to complete and return the package.

Results

Preliminary Analyses

Seventy-nine couples completed assessment (4 couples withdrew during this phase of the study) and were randomly assigned to either Self-PREP or the control condition; 23 low-risk and 19 high-risk couples were assigned to Self-PREP, and 21 low-risk and 16 high-risk couples were assigned to the control condition. Sixty-nine couples completed the program and the postintervention assessments. In the case of 3 of the 69 couples completing postassessment, we were unable to code the videotaped communication data because of technical difficulties (low volume or poor-quality sound). Five of 42 couples (12%) dropped out of Self-PREP, and 5 of 37 couples (14%) dropped out of the control condition. Of the couples who dropped out of Self-PREP, 2 were low risk and 3 were high risk; 2 low-risk and 3 high-risk couples dropped out of the control program. Of the 69 couples who completed postassessment, we were able to assess 61 at the 1-year follow-up; 5 couples had separated by that point, and 3 couples were unable to be located or declined further involvement.

We were able to assess communication behaviors for 53 of the 61 couples taking part at the 1-year follow-up. Six couples declined to attend assessment sessions at our laboratory but provided self-report data, and behavioral data were lost for 2 couples as a result of technical problems with equipment. At the 4-year follow-up, we were able to contact and assess 50 cou-

ples; 6 couples had separated between the 1- and 4-year follow-ups, we could not locate 4 couples, and 1 couple who had participated in the 1-year follow-up declined to be assessed. Overall, of the 69 couples who completed either Self-PREP or the control, 8 were unable to be contacted or declined involvement by the 4-year follow-up; thus, we were able to assess outcomes (relationship satisfaction in intact couples, or separation) in 61 couples (88%).

Effects on Couple Communication

We calculated correlations between all of the behavioral measures of communication at preintervention. The negative communication behaviors of conflict, invalidation, and negative nonverbal behaviors were moderately to highly intercorrelated for both men and women (range: $r = .51$ to $r = .92$). There were low to moderate correlations between the positive communication behaviors of positive discussion and validation (.34 to .42) and low to moderate correlations between positive and negative behaviors (−.36 to −.45). Given that the Self-PREP program emphasizes reducing negative communication and that negative and positive communication were only modestly associated, we analyzed the effects of the intervention separately for negative and positive communication.

Conflict, invalidation, and negative nonverbal behaviors were entered into a five-way Condition (Self-PREP vs. control) × Risk (high vs. low) × Time (preintervention and postintervention vs. 1-year follow-up) × Gender × Topic (male nominated vs. female nominated) multivariate analysis of variance (MANOVA). The last three variables were within-subject variables. There were significant main effects of risk, $F(3, 45) = 3.61$, $p < .05$; time, $F(6, 42) = 5.77$, $p < .001$; and gender, $F(3, 45) = 9.11$, $p < .001$. However, there were no significant effects of topic or condition. Of the remaining interaction terms, only four were significant: Time × Topic, $F(6, 42) = 2.93$, $p < .05$; Time × Condition × Risk, $F(6, 42) = 2.33$, $p < .05$; Time × Topic × Condition × Risk, $F(3, 93) = 2.43$, $p < .05$; and Gender × Topic × Condition, $F(3, 45) = 3.07$, $p < .05$.

Univariate repeated measures ANOVAs were conducted on each of the individual negative communication behaviors to assess the source of the significant multivariate effects. Table 2 presents the means and standard deviations for each communication behavior at each time period. Significantly more conflict was shown by high- than low-risk couples, $F(1, 47) = 10.29$, $p < .01$, and by women than men, $F(1, 47) = 14.67$, $p < .001$, and there was a significant decrease in conflict over time, $F(2, 94) = 16.47$, $p < .001$. There was a significant three-way interaction of time, condition, and risk, $F(2, 94) = 3.90$, $p < .05$, and a trend for a significant interaction between time and risk, $F(2, 94) = 2.52$, $p = .09$. None of the other interactions were significant.

Figure 1 shows conflict means by condition, risk, and time. This figure should be interpreted with considerable caution, in that the individual data points are means based on small sample sizes. Tests for simple main effects of condition were conducted for each risk group at postintervention and at the 12-month follow-up. Low-risk couples receiving Self-PREP showed decreased conflict from preintervention to postintervention, and, at post-intervention, low-risk couples in Self-PREP showed significantly less conflict than the control couples, $F(1, 35) = 5.23$, $p < .05$. However, by the 12-month follow-up, the control group exhibited decreased conflict, and there was no significant difference between the Self-PREP and control groups in terms of conflict. In contrast, high-risk couples in both conditions decreased in conflict from preintervention to postintervention, and at postintervention there were no significant differences in conflict between the conditions. At follow-up, the high-risk Self-PREP group showed some continuing decreases in conflict, whereas the high-risk control group did not; however, there was no statistically reliable difference between the two conditions. Thus, there was a reliable overall decrease in conflict over time, with different patterns of decrease by risk and condition.

Significantly higher rates of invalidation were shown by high- than low-risk couples, $F(1, 47) = 11.1$, $p < .01$, and by women than men, $F(1, 47) = 17.68$, $p < .001$. There was a significant reduction in invalidation over time, $F(2, 94) = 9.87$, $p < .001$. The Time × Risk interaction was significant, $F(2, 94) = 3.66$, $p < .05$, as was a four-way interaction among gender, topic, condition, and risk, $F(1, 47) = 5.24$, $p < .05$. None of the remaining interaction terms were significant. The pattern of results for men and women was similar and is depicted in

Figure 1. Low-risk couples' invalidation declined from preintervention to postintervention in Self-PREP and increased in the control condition, and the groups were significantly different at postintervention, $F(1, 35) = 6.58$, $p < .05$. However, at the 12-month follow-up, invalidation in Self-PREP had increased somewhat, and there was no longer a significant difference between the conditions. Invalidation decreased in high-risk couples in both conditions, and there was no difference between the conditions at postintervention. Although invalidation appeared to decline from postintervention to the 12-month follow-up in the Self-PREP condition, there was no significant difference between the Self-PREP and control groups at follow-up. Thus, as for the pattern of findings on conflict, there was a reliable overall decrease in invalidation over time, with different patterns of decrease by risk and condition.

Higher rates of negative nonverbal behavior were evident in high- than low-risk couples, $F(1, 47) = 4.99$, $p < .05$, and in women than men, $F(1, 47) = 18.13$, $p < .001$. There was no significant main effect of time, but there were significant interactions between time and risk, $F(2, 94) = 3.19$, $p < .05$, and among time, condition, and risk, $F(2, 94) = 3.14$, $p < .05$. None of the other interactions were significant. Low-risk couples' negative nonverbal behaviors in the Self-PREP and control conditions were not significantly different at postintervention or at the 12-month follow-up. Self-PREP and control high-risk couples did not differ significantly at postintervention. From postintervention to the 12-month follow-up, Self-PREP couples decreased in regard to negativity, whereas control couples increased, and Self-PREP couples showed significantly less negative nonverbal behavior at the 12-month follow-up than the control couples, $F(1, 22) = 5.62$, $p < .05$. Thus, there seemed to be sustained effects of Self-PREP relative to the control condition on negative nonverbal behavior in the high-risk couples but no effects in the low-risk couples.

Positive discussion and validation were entered into a five-way Condition × Risk × Time × Gender × Topic MANOVA. The last three variables were within-subject variables. There was a significant main effect for risk, $F(2, 46) = 5.54$, $p < .001$, and a trend for an effect of time, $F(4, 188) = 2.40$, $p = .05$, but there was no effect of condition, gender, or topic. Two interaction terms were significant: Gender × Risk, $F(2, 46) = 10.90$, $p < .001$, and Topic × Condition × Risk, $F(2, 46) = 4.92$, $p < .05$.

Univariate ANOVAs were conducted on both positive discussion and validation to assess the source of the significant multivariate effects. Positive discussion was high at preintervention, and there was a small but significant increase in positive discussion over time, $F(2, 94) = 3.13$, $p < .05$. There were no main effects of condition, gender, topic, or risk. The only significant interaction was that among time, gender, and risk, $F(2, 94) = 3.45$, $p < .05$. High-risk men increased in regard to positive discussion over time, whereas low-risk men and high- and low-risk women did not. There was no evidence of differential effects of Self-PREP and the control condition on positive discussion.

There were no significant main effects on rates of validation, but there was a trend for an increase over time, $F(2, 94) = 2.61$, $p = .08$. There were significant interactions of gender and risk, $F(1, 47) = 22.23$, $p < .001$; topic, condition, and risk, $F(1, 47) = 9.99$, $p < .01$; and time, gender, topic, condition, and risk, $F(2, 94) = 3.80$, $p < .05$. Low-risk Self-PREP couples showed a trend toward increased validation relative to low-risk controls at postintervention, $F(1, 35) = 3.30$, $p = .08$, but there was no significant difference between the conditions at the 12-month follow-up. High-risk Self-PREP and control couples did not differ significantly at either postintervention or the 12-month follow-up. The significant Time × Gender × Topic × Condition × Risk interaction seemed to be associated with Self-PREP enhancing validation relative to the control condition, but only in high-risk couples and most markedly in men. However, the confidence intervals of condition means overlapped for each gender and risk level at each time point, so caution must be exercised in interpreting this interaction.

Effects on Relationship Satisfaction and Stability

Relationship satisfaction was assessed on the DAS at preintervention and postintervention and at the 1- and 4-year follow-ups. These measures were examined in a four-way Condition × Risk × Gender × Time ANOVA with repeated measures on the last two variables. Means and

Table 2
Means and Standard Deviations for Communication Behaviors

Risk level and treatment	Male-nominated topic						Female-nominated topic					
	Female behavior			Male behavior			Female behavior			Male behavior		
	Pre	Post	F/U	Pre	Post	F/U	Pre	Post	F/U	Pre	Post	F/U
Conflict behavior												
Low												
Control												
M	20.8	30.1	17.5	18.9	22.3	14.6	26.4	27.1	15.0	27.9	24.6	15.4
SD	18.9	22.5	13.7	16.5	20.0	11.0	17.3	16.3	11.1	22.7	20.5	18.2
Self-PREP												
M	19.5	13.2	22.1	22.0	15.3	14.4	34.1	17.4	20.0	26.8	11.8	12.6
SD	18.8	12.1	22.1	14.6	17.0	21.4	19.5	19.7	21.7	21.6	14.3	14.9
High												
Control												
M	46.0	33.5	34.0	33.0	26.0	28.5	48.0	28.5	33.5	46.5	24.5	26.5
SD	26.4	31.5	36.0	28.9	26.1	31.5	24.7	22.7	22.9	30.7	20.7	23.3
Self-PREP												
M	49.5	37.7	22.0	33.5	31.0	16.0	49.5	29.5	29.0	35.5	24.5	28.0
SD	23.0	19.8	15.8	23.6	24.9	12.2	31.2	20.3	14.5	22.7	16.7	17.8
Invalidation behavior												
Low												
Control												
M	29.5	38.0	21.8	21.9	25.9	20.7	29.3	38.9	23.9	25.7	29.3	27.1
SD	26.4	21.1	18.1	18.7	25.8	15.0	22.4	21.0	21.0	25.0	25.4	25.8
Self-PREP												
M	22.8	18.5	24.7	25.1	16.5	17.6	38.2	23.2	27.6	30.6	14.1	21.2
SD	19.1	14.9	23.4	14.5	16.6	22.3	21.3	27.8	23.9	23.8	15.9	24.5
High												
Control												
M	56.0	43.0	44.0	43.5	33.0	35.0	59.0	42.0	41.5	44.5	33.0	33.0
SD	29.7	30.9	36.1	31.1	31.8	30.8	23.2	25.4	23.6	29.0	20.7	28.7
Self-PREP												
M	62.0	42.2	34.0	40.0	29.5	17.0	56.0	38.0	33.5	40.5	26.5	36.0
SD	22.5	24.1	23.5	27.9	24.2	12.7	29.4	30.8	13.6	28.1	16.7	18.2
Negative nonverbal behavior												
Low												
Control												
M	6.5	5.7	7.9	0.4	5.7	1.1	1.8	12.9	4.6	2.9	5.7	3.2
SD	21.3	10.5	15.0	1.3	21.4	2.9	3.1	26.9	8.2	8.3	18.7	7.5
Self-PREP												
M	3.0	3.2	10.6	1.8	0.3	2.1	2.9	9.7	13.8	1.2	0.3	3.5
SD	8.5	8.5	18.5	5.3	1.2	6.1	6.1	25.1	19.7	3.3	1.2	6.3
High												
Control												
M	18.0	13.5	19.0	8.5	3.5	8.5	27.5	13.0	20.5	6.5	1.0	9.0
SD	29.7	17.0	29.3	20.4	11.1	20.4	29.5	25.1	23.5	9.7	2.1	13.9
Self-PREP												
M	15.5	8.0	10.5	3.5	0.0	0.0	17.5	17.5	3.5	0.5	1.0	1.5
SD	17.4	12.1	17.6	8.2	0.0	0.0	27.2	32.4	5.3	1.6	2.1	3.4
Positive discussion behavior												
Low												
Control												
M	86.0	89.1	90.0	84.1	82.9	88.9	86.8	92.1	87.1	86.1	87.5	89.6
SD	11.9	10.3	9.2	14.5	28.7	13.2	8.2	8.9	14.5	13.8	12.1	10.6
Self-PREP												
M	85.4	88.2	87.9	91.7	88.5	88.8	85.2	92.1	88.8	87.7	85.3	85.9
SD	15.2	12.0	15.6	6.4	10.4	12.3	13.3	8.1	13.3	15.4	11.7	16.1

Table 2 (*continued*)

Risk level and treatment	Male-nominated topic						Female-nominated topic					
	Female behavior			Male behavior			Female behavior			Male behavior		
	Pre	Post	F/U	Pre	Post	F/U	Pre	Post	F/U	Pre	Post	F/U
	Positive discussion behavior (*continued*)											
High												
Control												
M	90.0	88.0	89.5	82.0	87.0	90.0	86.5	92.0	86.0	77.5	93.5	89.0
SD	9.7	10.3	10.1	24.3	7.2	7.1	17.1	11.4	9.7	20.2	5.8	14.7
Self-PREP												
M	88.5	89.5	87.5	86.5	94.9	93.5	86.5	90.0	89.5	91.0	92.0	89.0
SD	9.4	10.7	12.7	18.0	8.2	7.1	10.3	18.4	11.9	14.7	7.2	11.0
	Validation behavior											
Low												
Control												
M	29.0	33.1	41.4	41.0	40.6	50.4	40.0	40.7	42.5	35.4	43.6	47.5
SD	13.7	14.2	18.1	31.1	20.4	11.5	16.8	9.4	19.5	22.8	19.9	14.8
Self-PREP												
M	44.1	41.8	43.2	51.9	52.1	54.7	32.4	41.2	42.1	47.1	54.4	54.1
SD	17.6	14.5	21.7	16.6	21.7	20.0	18.3	19.2	16.5	21.6	21.5	25.7
High												
Control												
M	52.5	47.0	47.0	43.0	44.5	47.0	44.0	40.5	45.0	41.0	43.0	33.0
SD	23.8	20.4	18.7	19.2	18.0	27.0	14.1	15.9	24.8	21.1	17.4	19.3
Self-PREP												
M	40.5	41.1	52.5	33.5	38.5	41.0	51.5	58.5	49.0	38.0	38.0	43.5
SD	20.9	9.6	19.3	13.1	16.3	17.4	31.8	19.9	18.4	22.1	15.9	21.2

Note. Pre = preintervention; Post = postintervention; F/U = follow-up; Self-PREP = Self-Regulatory Prevention and Relationship Enhancement Program.

standard deviations are shown in Table 3. Overall, there was a significant decrease in relationship satisfaction over time, $F(3, 141) = 8.91$, $p < .001$, but none of the other main effects were significant. There was a significant three-way interaction of time, risk, and condition, $F(3, 141) = 5.17$, $p < .01$. None of the remaining interaction effects were significant. High-risk couples receiving Self-PREP decreased less on relationship satisfaction (as assessed with the DAS) than the control group. Low-risk control couples sustained their initial relationship satisfaction, but low-risk Self-PREP couples showed declines in relationship satisfaction over time.

Given that there was substantial variability within conditions in preintervention satisfaction, we conducted a three-way analysis of covariance of change in relationship satisfaction (Risk × Condition × Gender); preintervention satisfaction was the covariate. There were no significant main effects, and the only significant interaction was that between condition and risk, $F(1, 53) = 7.38$, $p < .01$. The differential effects of condition and risk status are clearly evident in Figure 2. Control high-risk partners showed significant decreases in relationship satisfaction from preintervention to the 4-year follow-up (mean change = −10.6, $SE = 3.1$), whereas high-risk Self-PREP couples showed no significant change over time (mean change = 1.2, $SE = 2.7$); the two conditions were significantly different from each other, $F(2, 19) = 5.28$, $p < .05$. The effect size of differential change between the Self-PREP and control groups was 1 standard deviation, a large effect according to Cohen's (1988) conventions for reporting effect sizes. In low-risk couples, the patterns across conditions were the reverse of those for high-risk couples; control low-risk couples showed a small mean increase in satisfaction that was not reliably different from zero ($M = 3.5$, $SE = 2.3$), whereas Self-PREP couples showed a significant decrease in relationship satisfaction ($M = -6.7$, $SE = 2.4$). Again, the two conditions were significantly different, $F(2, 24) = 11.88$, $p < .001$. The effect size here was −0.6 standard deviations, a moderate to large effect size.

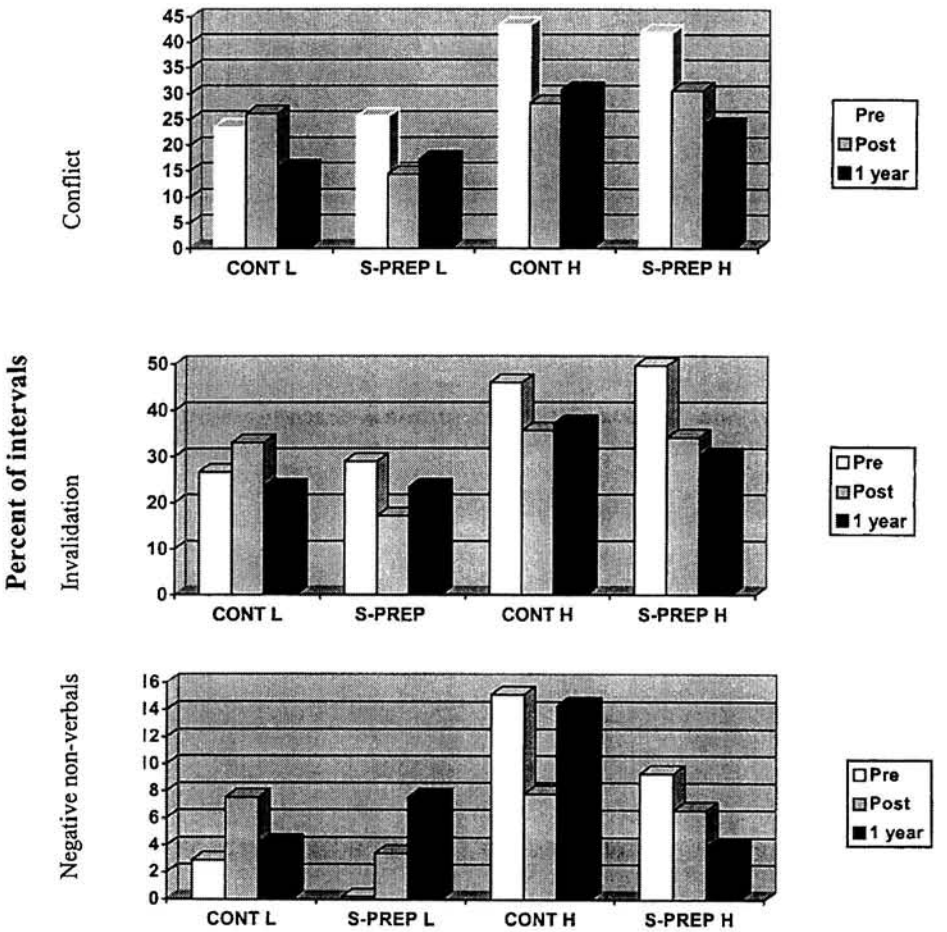

Figure 1. Couple communication by risk group and relationship education. Pre = preintervention; Post = postintervention; CONT = control; L = low risk; S-PREP = Self-Regulatory Prevention and Relationship Enhancement Program; H = high risk.

We conducted a four-way MANOVA of steps taken toward relationship dissolution as assessed on the RSI. The variables were condition, risk, time (preintervention vs. 1- and 4-year follow-ups), and gender, with repeated measures on the last two variables. There was a main effect of time, $F(2, 108) = 3.61$, $p < .05$, with mean steps taken toward dissolution not changing significantly from preintervention to the 1-year follow-up but increasing between the 1- and 4-year follow-ups, $F(1, 54) = 11.41$, $p < .01$. None of the other main effects were significant. There were significant two-way interactions between time and risk, $F(2, 108) = 3.22$, $p < .05$, and between gender and treatment, $F(1, 54) = 8.69$, $p < .01$. There also was a significant three-way interaction among time, gender, and risk, $F(2, 108) = 3.54$, $p < .05$. None of the other interactions were significant. Mean steps reported toward separation for low-risk women decreased from preintervention ($M = 1.34$, $SE = 0.26$) to the 4-year follow-up ($M = 0.74$, $SE = 0.29$), and they also decreased for low-risk men from preintervention ($M = 1.29$, $SE = 0.25$) to the 4-year follow-up ($M = 0.73$, $SE = 0.29$). High-risk women showed no significant change from preintervention ($M = 1.36$, $SE = 0.32$) to the 4-year follow-up ($M =$

Table 3
Means and Standard Deviations for Relationship Satisfaction and Steps Toward Dissolution

Risk level	Treatment	Gender	Preintervention		Postintervention		1 year		4 years	
			M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
			Relationship satisfaction							
Low	Control	Women	118.1	10.6	120.9	10.0	121.7	10.3	120.8	9.1
		Men	119.3	10.9	122.5	7.4	121.0	9.7	121.1	9.7
	Self-PREP	Women	116.3	12.9	116.0	9.5	119.9	10.2	110.7	9.0
		Men	112.5	13.9	110.3	11.5	117.2	13.0	107.5	10.5
High	Control	Women	121.1	13.5	116.8	15.4	124.8	16.2	106.3	14.5
		Men	116.6	10.4	116.7	11.7	120.3	12.5	109.4	17.1
	Self-PREP	Women	118.3	13.5	117.3	9.7	122.3	12.5	115.6	10.7
		Men	112.0	9.1	117.0	7.7	115.9	10.5	117.3	10.3
			Steps toward relationship dissolution							
Low	Control	Women	1.3	1.6			1.0	1.6	0.5	0.7
		Men	1.1	1.4			0.4	0.9	0.4	0.9
	Self-PREP	Women	1.4	2.0			0.8	1.0	1.1	1.2
		Men	1.7	2.1			1.2	1.6	1.2	1.5
High	Control	Women	1.6	1.1			0.3	0.7	1.0	1.5
		Men	0.8	1.0			0.2	0.4	1.3	2.0
	Self-PREP	Women	1.0	1.3			0.7	1.1	1.2	1.7
		Men	0.3	0.6			1.0	1.0	1.8	2.2

Note. Self-PREP = Self-Regulatory Prevention and Relationship Enhancement Program.

1.01, $SE = 0.30$), whereas steps taken toward separation increased for high-risk men from preintervention ($M = 0.53$, $SE = 0.30$) to the 4-year follow-up ($M = 1.55$, $SE = 0.35$). The absence of significant Condition × Time and Condition × Time × Risk interaction effects indicates that there was no differential effect of condition on reported steps taken toward relationship dissolution.

At the 4-year follow-up, of the 69 couples who completed either Self-PREP or the control program, 15 couples (19%) had separated and 53 remained together; and the status of 1 couple could not be assessed. Eight of the 44 low-risk couples (18%) and 7 of the 35 high-risk couples (20%) had separated. Chi-square tests showed that there was no significant association between being separated and either risk status or intervention condition.

Differential attrition between the conditions may have produced artifactual findings. For example, if those couples lost to follow-up had done poorly, and if they were over-represented in one condition, this may have led to that condition appearing to have better outcomes than it really did. We compared couples who provided 4-year follow-up data with couples lost to follow-up. There were no significant differences between those remaining in the study and those who had dropped out on either initial relationship satisfaction scores on the DAS or reported physical aggression by either partner. Dropouts did report significantly greater steps taken toward relationship dissolution on the RSI at pretreatment than those who remained in the study, $F(1, 80) = 2.84$, $p < .05$. However, given that there was no association between separation and either risk level or intervention condition, differential dropout across conditions or risk levels could not account for the findings.

Discussion

We evaluated, within a randomized controlled trial, the effects of Self-PREP on communication, relationship satisfaction, and relationship stability among couples stratified into groups at high and low risk for relationship problems. Hypotheses 1, 2, and 3 were that, relative to a control condition, high-risk couples would benefit from Self-PREP in terms of enhanced communication, reduced erosion of relationship satisfaction, and decreased relationship dissolution, respectively. Hypothesis 1 was only partially supported. Contrary to prediction, both Self-PREP and control high-risk couples improved in communication from preinterven-

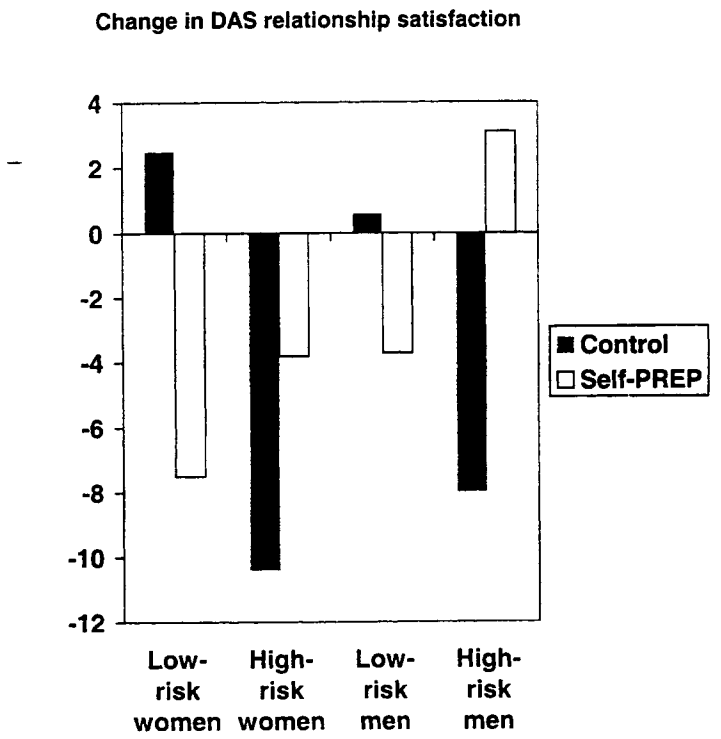

Figure 2. Changes in relationship satisfaction over 4 years. DAS = Dyadic Adjustment Scale; Self-PREP = Self-Regulatory Prevention and Relationship Enhancement Program.

tion to postintervention, with no significant difference between conditions. However, at the 1-year follow-up, results were closer to predictions. High-risk couples receiving Self-PREP were significantly less negative nonverbally than control couples. Also, relative to the control group, the Self-PREP group exhibited somewhat lower conflict and invalidation, although these differences were not statistically reliable. As predicted in Hypothesis 2, high-risk couples receiving Self-PREP showed significantly less erosion of relationship satisfaction across 4 years of the relationship than control couples. Hypothesis 3 was not supported.

Hypotheses 4, 5, and 6 were that, relative to a control condition, low-risk couples would not benefit from Self-PREP in terms of enhanced communication, reduced erosion of relationship satisfaction, and decreased relationship dissolution, respectively. Hypothesis 4 was partially supported. Contrary to predictions, Self-PREP produced some short-term improvements in verbal communication relative to the control condition in low-risk couples, but the control couples subsequently improved their communication and were similar to the Self-PREP high-risk couples at the 1-year follow-up. Both Hypothesis 5 and Hypothesis 6 were supported. As predicted, there was no evidence that Self-PREP reduced erosion of relationship satisfaction or relationship dissolution in low-risk couples. In fact, an unexpected finding was that low-risk control couples showed significantly less erosion of relationship satisfaction than low-risk Self-PREP couples.

Effects of Self-PREP on Relationship Communication, Satisfaction, and Stability

To our knowledge, this is the first randomized controlled trial to evaluate the long-term effects of relationship education among couples stratified by their level of risk for relationship problems. The current findings replicate and extend earlier studies showing that couples improve their communication with skills-based relationship education (e.g., Hahlweg et al., 1998; Ridley et al., 1982; Stanley et al., 1995). Also,

our findings replicate previous research indicating that skill-based relationship education is associated with reductions in communication negativity. However, the intervention effects over time were moderated by risk level. Low-risk but not high-risk couples improved their communication from preintervention to postintervention relative to control couples, but these differences had attenuated by the 12-month follow-up. In contrast, high-risk couples receiving either Self-PREP or the control program improved communication from preintervention to postintervention, but the Self-PREP high-risk couples showed less negative communication than control couples at the 12-month follow-up.

The effects of Self-PREP on communication in the current study need to be interpreted cautiously. There were significant Condition × Risk × Time interactions on most indexes of couple communication, showing differential responses to the intervention by risk level. However, in the comparison between Self-PREP and control groups within risk levels at any given time point, significant differences were evident on only a few of the indexes of communication. Given the modest sample size, the small number of significant differences may be attributable to lack of power. The trends consistently suggest that Self-PREP produced long-term improvements in communication among high-risk couples and that the effects of Self-PREP on low-risk couples were transitory. However, preintervention levels of negativity in the low-risk couples were very low and levels of positive communication were high, and the lack of long-term effects of Self-PREP may reflect floor and ceiling effects.

Our results replicate the Hahlweg et al. (1998) and Stanley et al. (1995) findings that PREP reduces erosion of relationship satisfaction over a 4- to 5-year period. However, the positive effects of Self-PREP were limited in the current study to high-risk couples. The significantly greater erosion of relationship satisfaction in low-risk Self-PREP couples relative to low-risk control couples was unexpected. Stanley et al. (1995) found evidence of greater attrition of couples with poor outcomes from the follow-up of control conditions than PREP conditions, which raises the possibility that poor outcomes in the low-risk Self-PREP condition may be an artifact of attrition of couples with poor outcomes from the low-risk control condition. Participants lost to follow-up in the current study did have higher preintervention endorsement of contemplation of relationship dissolution on the RSI than couples remaining in the study. However, there was no evidence of differential attrition from the Self-PREP and control conditions.

Replication is needed for the current finding that low-risk couples did more poorly when receiving Self-PREP than did control couples. If future research replicates that there are some negative effects of skills-based relationship education for low-risk couples, it will be important to attempt to establish the source of any adverse effects. Markman et al. (1994) proposed that negative communication erodes relationship satisfaction in couples and suggested that the reduction in negative communication produced by PREP accounts for its effects in helping couples maintain high relationship satisfaction. Given that low-risk couples have relatively low rates of negative communication, as found in the current study, this may explain why there was no benefit of Self-PREP for low-risk couples. However, this does not explain the unexpected deleterious effects of Self-PREP on low-risk couples. Perhaps the communication skills taught in Self-PREP displace preexisting effective communication of low-risk couples, although for the behavioral measures in the current study there was no evidence of poorer communication developing in low-risk couples after the intervention.

Alternatively, the less structured control program may allow better functioning couples to select those ideas that really are useful to them rather than feeling implicit pressure to adopt ideas offered in the more structured Self-PREP. However, the focus on self-selection of change goals in Self-PREP makes this unlikely. The self-regulatory focus of Self-PREP probably increases self-surveillance. This may alter unhelpful patterns in high-risk couples, but in low-risk couples it might paradoxically increase concerns and promote a degree of relationship "spectatoring." This may inhibit relationship satisfaction in a manner similar to that in which self-conscious "spectatoring" inhibits sexual comfort and satisfaction (Spence, 1997). Future research needs to evaluate the effects of relationship education on high- and low-risk couples to examine whether the negative effects for low-risk couples are replicated.

Contrary to predictions, there was no effect of Self-PREP on relationship dissolution. Nor were there any differences in rates of separation between low- and high-risk couples. Given that only 15 couples had separated by the 4-year follow-up, the sample size was inadequate to provide sufficient power to detect an effect of intervention or risk on separation. Mean reported steps toward dissolution on the RSI were low (two or less) among those couples still together, and there may have been a floor effect preventing detection of differential effects. Furthermore, there may have been overrepresentation of separated couples in those lost to follow-up. There were more steps toward dissolution reported by couples who dropped out of the study, and separating couples usually change residence (McDonald, 1995), which probably increases the chance of separating couples being lost to follow-up. Even with the very low levels of reported steps taken toward dissolution in the remaining sample, high-risk men reported increased consideration of separation over time. A study involving a larger sample size assessed across a longer follow-up period may detect an effect of relationship education or risk level on relationship separations.

Distinctive Characteristics of Self-PREP and the Notion of High Risk

Self-PREP is similar to the original PREP in the communication and conflict management skills taught, the emphases on promoting intimacy and clarification of relationship expectations, and the use of active skills training. However, the self-regulation focus of Self-PREP is distinctive. The rationale for the focus on self-regulation was to enhance the capacity of couples to maintain long-term patterns of interaction that sustain relationship satisfaction. Our experience in running the program was that the self-regulation processes of helping couples appraise their relationship functioning, helping them set relationship goals, and working with them to define specific personal actions to enhance the relationship all were well received. These processes are consistent with the broad principles of effective adult learning, with an emphasis on self-determination of learning goals and active involvement in definition of learning processes (Laurillard, 1995). However, we did not directly measure attainment of self-regulation competencies and cannot determine whether self-regulation processes affected outcomes. In recent work, we have developed a self-report measure of relationship self-regulation (Wilson et al., 2001). In ongoing work, we are using that measure to assess change in self-regulation resulting from skills-based relationship education, which will test whether increases in self-regulation mediate the effects of skills-based relationship education on relationship satisfaction.

The current findings in regard to the differential effects of Self-PREP on high- and low-risk couples do not necessarily apply to the original PREP programs described by Markman et al. (1988). If the self-regulation focus in Self-PREP influences outcomes greatly (e.g., inducing unhelpful "spectatoring" in low-risk couples), then the original PREP may produce a different pattern of findings for high- and low-risk couples.

The definition of high-risk couples needs to be refined in future research. In the current study, the definition of high risk was based on evidence that certain negative family-of-origin experiences are associated with an increased risk of both relationship problems (Halford, 1999; Karney & Bradbury, 1995) and poor communication (Halford et al., 2000; Sanders et al., 1999). Some validation of this risk classification was provided in the current study by the findings of more negative communication and more reported aggression in the high-risk couples than the low-risk couples at preintervention. Moreover, there was greater erosion of relationship satisfaction in the high-risk couples than in the low-risk couples within the control condition. However, there are many predictors of high risk of relationship problems, including psychological disorders, alcohol abuse, or certain personality characteristics in partners; formation of a stepfamily; lack of religious affiliation; and low support of the relationship by extended family and friends (Booth & Johnson, 1988; Halford, 1999; Kurdeck, 1993; Larson & Holman, 1994). The mechanisms by which these various risk factors affect relationships are far from clear, and any of these variables may moderate the effects of relationship education. Future research may allow matching of relationship education content to the needs of particular high-risk couples. For example, in stepfamilies, strained stepparent–child relationships predict separation better than the couple's relationship

satisfaction (Bray & Berger, 1993), and targeting enhancement of parenting may significantly improve relationship outcomes in stepfamilies.

Study Limitations

The present study has several important limitations. First, although to our knowledge 4 years is one of the longest follow-up evaluations conducted of relationship education, it is important to establish the effects of relationship education over even longer time periods. Second, the sample size was large relative to those of most other published evaluations of relationship education, but it did limit our power to detect differential intervention effects on relationship stability by risk. A larger sample size combined with a longer follow-up period would provide a better test of the hypothesis that relationship education can prevent relationship separations.

In the current study, we were unable to conduct independent observations to assess protocol adherence by the group leaders. Given that one group leader delivered both conditions, it is possible that there was some contamination between conditions. However, we did develop detailed leader manuals, conduct regular supervision, and videotape and review sessions. The differential intervention effects observed support the distinctiveness of the conditions. The control condition involved reading a book and discussing the ideas presented, whereas the Self-PREP condition involved practicing particular skills within and between group sessions. We did not measure the extent to which couples applied ideas and skills introduced in the control or Self-PREP conditions. In future research, it would be useful to assess the extent of implementation of program suggestions by couples and to evaluate whether implementation mediates the effects of relationship education.

Implications for Application and Social Policy

The results of the current study replicate previous findings that skills-based relationship education enhances couple communication and prevents erosion of relationship satisfaction. To date, there is no evidence for the long-term benefits of relationship education approaches other than skill-based programs. Given that ours is the third study to report positive long-term effects of skill-based relationship education, this is the relationship education intervention of choice for couples entering committed relationships.

The positive effects of Self-PREP were evident only among high-risk couples. Among low-risk couples, there was greater erosion of relationship satisfaction in the skills-based relationship education condition than in the control condition. The possibility of deleterious effects of relationship education for some couples sounds an important warning that more research is necessary on the effects of relationship education among low- and high-risk couples. In the longer term, this has important social policy implications; relationship education offered selectively to couples at high risk for relationship problems may produce the best effects in reducing relationship distress.

References

Arias, I., Samios, M., & O'Leary K. D. (1987). Prevalence and correlates of physical aggression during courtship. *Journal of Interpersonal Violence, 2,* 82–90.

Avery, A., Ridley, C., Leslie, L., & Milholland, T. (1980). Relationship enhancement with premarital dyads: A six month follow-up. *American Journal of Family Therapy, 8,* 23–30.

Behrens, B. C., Sanders, M. R., & Halford, W. K. (1990). Generalization of communication skills training during behavioral marital therapy. *Behavior Therapy, 21,* 423–433.

Booth, A., & Johnson, D. (1988). Premarital cohabitation and marital success. *Journal of Family Issues, 9,* 255–272.

Bradbury, T. N. (Ed.). (1998). *The developmental course of marital dysfunction.* New York: Cambridge University Press.

Bray, J. H., & Berger, S. H. (1993). Developmental Issues in StepFamilies Research Project: Family relationships and parent–child interactions. *Journal of Family Psychology, 7,* 76–90.

Burgess, A. W., Hartman, C. R., & McCormack, A. (1987). Abused to abuser: Antecedents of socially deviant behaviors. *American Journal of Psychiatry, 144,* 1431–1436.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.

Coie, J. D., Watt, N. F., West, S. G., Hawkins, J. D., Asarnow, J. R., Markman, H. J., Ramey, S. L., Shure, M. B., & Long, B. (1993). The science of prevention: A conceptual framework and some directions for a national research program. *American Psychologist, 48,* 1013–1022.

de Graaf, A. (1991). De invloed van echtscheiding

van de ouders op demografisch gedrag van de vrouw [The impact of divorced parents on women's demographic behavior]. *Maandstatistick van de Bevolking, 39,* 30–38.

Dyer, C., & Halford, W. K. (1998). Prevention of relationship problems: Retrospect and prospect. *Behaviour Change, 15,* 107–125.

Glenn, N. D., & Kramer, K. B. (1987). The marriages and divorces of the children of divorce. *Journal of Marriage and the Family, 49,* 811–825.

Glenn, N. D., & Shelton, B. A. (1983). Pre-adult background variables and divorce: A note of caution about over-reliance on variance. *Journal of Marriage and the Family, 45,* 405–410.

Gore, S. (1978). The effect of social support in moderating the health consequences of unemployment. *Journal of Health and Social Behavior, 19,* 157–165.

Gottman, J. M. (1993). A theory of marital dissolution and stability. *Journal of Family Psychology, 7,* 57–75.

Gove, W. R., Hughes, M., Style, C. B. (1983). Does marriage have positive effects on the psychological well-being of the individual? *Journal of Health and Social Behavior, 24,* 122–131.

Hahlweg, K., & Conrad, P. (1985). *The Interaction Coding System.* Unpublished manual, Department of Psychology, University of California, Los Angeles.

Hahlweg, K., Markman, H. J., Thurmair, F., Engel, J., & Eckert, J. (1998). Prevention of marital distress: Results of a German prospective longitudinal study. *Journal of Family Psychology, 12,* 543–556.

Halford, W. K. (1999). *Australian couples in Millennium Three: A research development agenda for marriage and relationship education.* Canberra, Australian Capital Territory, Australia: Department of Family and Community Services.

Halford, W. K. (2001). *Brief couple therapy: Helping partners help themselves.* New York: Guilford Press.

Halford, W. K., Behrens, B. C. (1996). Prevention of marital difficulties. In P. Cotten & H. J. Jackson (Eds.), *Early intervention and prevention in mental health* (pp. 21–58). Melbourne, Victoria, Australia: Australian Psychological Society.

Halford, W. K., Kelly, A., & Markman, H. J. (1997). The concept of a healthy marriage. In W. K. Halford & H. J. Markman (Eds.), *Clinical handbook of marriage and couples intervention* (pp. 3–12). Chichester, England: Wiley.

Halford, W. K., Sanders, M. R., & Behrens, B. C. (1993). A comparison of the generalization of behavioral marital therapy and enhanced behavioral marital therapy. *Journal of Consulting and Clinical Psychology, 61,* 51–60.

Halford, W. K., Sanders, M. R., & Behrens, B. C. (1994). Self-regulation in behavioral couples therapy. *Behavior Therapy, 25,* 431–452.

Halford, W. K., Sanders, M. R., & Behrens, B. C. (2000). Repeating the errors of our parents? Family of origin spouse violence and observed conflict management in engaged couples. *Family Process, 39,* 219–235.

Hill, C. T., & Peplau, L. A. (1998). Premarital predictors of relationship outcomes: A 15-year follow-up of the Boston Couples Study. In T. N. Bradbury (Ed.), *The developmental course of marital dysfunction* (pp. 237–278). New York: Cambridge University Press.

Hotaling, G., & Sugarman, D. (1986). An analysis of risk markers in husband to wife violence: The current state of knowledge. *Violence and Victims, 1,* 101–124.

House of Representatives, Standing Committee on Legal and Constitutional Affairs. (1998). *To have and to hold: Strategies to strengthen marriage and relationships.* Canberra, Australian Capital Territory, Australia: Author.

Huston, T. L., & Vangelisti, A. L. (1991). Socioemotional behavior and satisfaction in marital relationships: A longitudinal study. *Journal of Personality and Social Psychology, 61,* 721–733.

Karney, B. R., & Bradbury, T. N. (1995). The longitudinal course of marital quality and stability: A review of theory, methods, and research. *Psychological Bulletin, 118,* 3–34.

Kelly, A. B., & Halford, W. K. (1995). The generalisation of cognitive-behavioural marital therapy in behavioural, cognitive and physiological domains. *Behavioural and Cognitive Psychotherapy, 23,* 381–398.

Kurdeck, L. A. (1993). Predicting marital dissolution: A 5-year prospective longitudinal study of newlywed couples. *Journal of Personality and Social Psychology, 64,* 221–242.

Kurdeck, L. A. (1998). The nature and predictors of the trajectory of change in marital quality over the first 4 years of marriage for first-married husbands and wives. *Journal of Family Psychology, 12,* 494–510.

Larson, J. H., & Holman, T. B. (1994). Premarital predictors of marital quality and stability. *Family Relations, 43,* 228–237.

Laurillard, D. (1995). *Rethinking university thinking.* London: Routledge.

Markman, H. J. (1981). The prediction of marital distress: A five-year follow-up. *Journal of Consulting and Clinical Psychology, 49,* 760–762.

Markman, H. J., Floyd, F. J., Stanley, S. M., & Storaasli, R. D. (1988). Prevention of marital distress: A longitudinal investigation. *Journal of Consulting and Clinical Psychology, 56,* 210–217.

Markman, H. J., & Hahlweg, K. (1993). The prediction and prevention of marital distress: An international perspective. *Clinical Psychology Review, 13,* 29–43.

Markman, H. J., Renick, M. J., Floyd, F. J., Stanley,

S. M., & Clements, M. (1993). Preventing marital distress through communication and conflict management training: A 4- and 5-year follow-up. *Journal of Consulting and Clinical Psychology, 61,* 70–77.

Markman, H. J., Stanley, S., & Blumberg, S. L. (1994). *Fighting for your marriage: Positive steps for preventing divorce and preserving a lasting love.* San Francisco: Jossey-Bass.

McDonald, P. (1995). *Families in Australia: A sociodemographic perspective.* Melbourne, Victoria, Australia: Australian Institute of Family Studies.

Mihalic, S. W., & Elliot, D. (1997). A social learning theory model of marital violence. *Journal of Family Violence, 12,* 21–47.

Miller, S., Nunnally, E., & Wackman, D. (1975). Minnesota Couples Communication Program (MCCP): Premarital and marital groups. In D. Olsen (Ed.), *Treating relationships* (pp. 21–40). Lake Mills, IA: Graphic.

Montgomery, R. B., & Evans, L. (1989). *Living and loving together.* Melbourne, Victoria, Australia: Penguin Books.

Noller, P., & Feeney, J. A. (1994). Relationship satisfaction, attachment, and nonverbal accuracy in early marriage. *Journal of Nonverbal Behavior, 18,* 199–221.

O'Leary, K. D., Barling, J., Arias, I., Rosenbaum, A., Malone, J., & Tyree, A. (1989). Prevalence and stability of physical aggression between spouses: A longitudinal analysis. *Journal of Consulting and Clinical Psychology, 57,* 263–268.

Osgarby, S. M., & Halford, W. K. (2000). *Positive intimacy skills and couple relationship satisfaction.* Manuscript submitted for publication.

Pasch, L. A., & Bradbury, T. N. (1998). Social support, conflict, and the development of marital dysfunction. *Journal of Consulting and Clinical Psychology, 66,* 219–230.

Pope, H., & Mueller, C. W. (1976). The intergenerational transmission of marital instability: Comparisons by race and sex. *Journal of Social Issues, 32,* 49–66.

Renick, M. J., Blumberg, S., & Markman, H. J. (1992). The Prevention and Relationship Enhancement Program (PREP): An empirically-based preventive intervention program for couples. *Family Relations, 41,* 141–147.

Ridley, C. A., Jorgensen, S. R., Morgan, A. C., & Avery, A. W. (1982). Relationship enhancement with premarital couples: An assessment of effects on relationship quality. *American Journal of Family Therapy, 10,* 41–48.

Rogge, R. D., & Bradbury, T. N. (1999). Till violence does us part: The differing roles of communication and aggression in predicting adverse marital outcomes. *Journal of Consulting and Clinical Psychology, 67,* 340–351.

Sanders, M. R. (1998). The empirical status of psychological interventions with families of children and adolescents. In L. L'Abate (Ed.), *Family psychopathology: The relational roots of dysfunctional behavior* (pp. 427–465). New York: Guilford Press.

Sanders, M. R., & Dadds, M. R. (1993). *Behavioral family intervention.* Boston: Allyn & Bacon.

Sanders, M. R., & Glynn, T. (1981). Training parents in behavioral self-management: An analysis of generalization and maintenance. *Journal of Applied Behavior Analysis, 14,* 223–237.

Sanders, M. R., Halford, W. K., & Behrens, B. C. (1999). Parental divorce and premarital couple communication. *Journal of Family Psychology, 13,* 60–74.

Simons, M., Harris, R., & Willis, P. (1994). *Pathways to marriage: Learning for married life in Australia.* Adelaide, South Australia, Australia: Centre for Research in Education and Work, University of South Australia.

Skuja, K., & Halford, W. K. (2000). *Repeating the errors of our parents? II: Parental spouse abuse in men's family of origin and conflict management in dating couples.* Manuscript submitted for publication.

Spanier, G. B. (1976). Measuring dyadic adjustment: New scales for assessing the quality of marriage and similar dyads. *Journal of Marriage and the Family, 38,* 15–28.

Spence, S. H. (1997). Sex and relationships. In W. K. Halford & H. J. Markman (Eds.), *Clinical handbook of marriage and couples interventions* (pp. 73–106). Chichester, England: Wiley.

Stanley, S., & Markman, H. J. (1996). *National survey of couples relationships in the United States.* Denver, CO: University of Denver.

Stanley, S. M., Markman, H. J., St. Peters, M., & Leber, B. D. (1995). Strengthening marriages and preventing divorce: New directions in prevention research. *Family Relations, 44,* 392–401.

Stith, S. M., & Farley, S. C. (1993). A predictive model of male spousal violence. *Journal of Family Violence, 8,* 183–201.

Straus, M. A. (1979). Measuring intrafamily conflict and violence: The Conflict Tactics (CT) Scales. *Journal of Marriage and the Family, 41,* 75–88.

Straus, M. A. (1991). Family violence in American families: Incidence rates, causes, and trends. In D. D. Knudsen & J. L. Miller (Eds.), *Abused and battered: Social and legal responses of family violence: Social institutions and social change* (pp. 17–34). New York: Aldine de Gruyter.

Straus, M. A., Gelles, R., & Steinmetz, S. K. (1980). *Behind closed doors: Violence in the American family.* New York: Doubleday.

van Widenfelt, B., Markman, H. J., Guerney, B. G. Jr., Behrens, B. C., & Hosman, C. (1997). Prevention of relationship problems. In W. K. Halford & H. J. Markman (Eds.), *Clinical handbook of mar-*

riage and couples intervention (pp. 651–678). Chichester, England: Wiley.

Veroff, J., Douvan, E., Orbuch, T. L., & Acitelli, L. K. (1998). Happiness in stable marriages: The early years. In T. N. Bradbury (Ed.), *The developmental course–of marital dysfunction* (pp. 152–179). New York: Cambridge University Press.

Wampler, K. S., & Sprenkle, D. (1980). The Minnesota Couple Communication Program: A follow-up study. *Journal of Marriage and the Family, 42,* 577–585.

Weiss, R. L., & Cerreto, M. C. (1980). The Marital Status Inventory: Development of a measure of dissolution potential. *American Journal of Family Therapy, 8,* 80–86.

Weiss, R. L., & Heyman, R. E. (1997). A clinical-research overview of couples interactions. In W. K. Halford & H. J. Markman (Eds.), *Clinical handbook of marriage and couples intervention* (pp. 13–41). Chichester, England: Wiley.

Widom, C. S. (1989). Does violence beget violence? A critical examination of the literature. *Psychological Bulletin, 106,* 3–28.

Wilson, K. L., Halford, W. K., Moore, E. M., Kimlin, S., Islen, G., & Lizzio, A. (2001). *Is a great couple relationship reward for effort? Measuring couple relationship self-regulation.* Manuscript submitted for publication.

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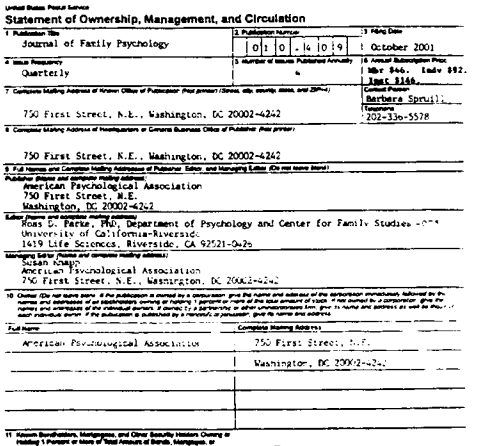

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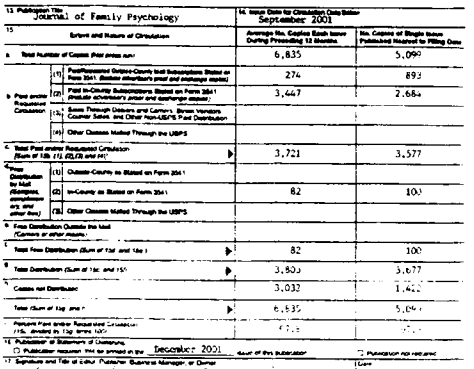

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